curable resin.

In the invention, the synthetic resin of the first layer includes pores therein, and the second layer partly enters the pores to firmly bond to the first layer through the pores. Accordingly, the first and second layers can be strongly bonded together.

In Oka et al., an antireflection film as shown in Fig. 16 is formed of a transparent substrate film 21, a hard coat layer 23 bonded to the substrate film 21 through an adhesive layer 22, a layer 25 having a high refractive index laminated on the hard coat layer 23, and a layer 24 having a low refractive index. An antireflection film as shown in Fig. 21 has a substrate 31, a resin layer 32, an ultrafine particle layer 34 with high refractive index deposited on the resin layer 32, and an ultrafine particle layer 33 with low refractive index. The ultrafine particle layers 33, 34 are embedded in the resin layer 32.

In the invention, the first layer formed of the synthetic resin and metallic oxide particles is deposited on the hard coating layer. In Oka et al., the layer 25 with high refractive index is formed on the hard coat layer 23. However, the layer 25 does not have any metallic oxide particles therein, different from the invention. Incidentally, the ultrafine particle layers 33, 34 in Fig. 21 are embedded in the resin layer 32, not deposited on the hard layer.

In the invention, also, the synthetic resin of the first layer containing the metallic oxide particles includes pores therein. In Oka et al., pores are not formed or considered in any layers.

Further, in the invention, the second layer deposited on the first layer partly enters the pores to be firmly bonded to the first layer through the pores. In Oka et al., the layers are simply laminated with each other.

In the invention, therefore, the first and second layers are firmly bonded together through the pores in the first layer and the parts of the second layer entering into the pores of the first layer. However, it is not disclosed or suggested in Oka et al. that the layers are bonded through the bores and the parts of the material entering into the bores. The features of the invention are not disclosed or suggested from Oka et al.

Reconsideration and allowance are earnestly solicited.

A two month extension of time is hereby requested. A check in the amount of $410.00 is attached herewith for the two month extension of time

Respectfully submitted,

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16.(amended) An antireflection film comprising:

an organic film,

a hard coating layer coated on the organic film,

a first layer having [high] an index of refraction and coated on the hard coating layer, [and

a layer having low index of refraction coated on the layer having high index of refraction,] said first layer [having high index of refraction consisting] being formed of a synthetic resin [thin film] having pores therein and [including] metallic oxide particles contained in the synthetic resin, said metallic oxide being at least one selected from [a] the group consisting of ZrO_2, TiO_2, NbO, ITO, ATO, SbO_2, In_2O_3, SnO_2 and ZnO, and said synthetic resin being ultraviolet ray curable resin or electron beam curable resin, and

a second layer having an index of refraction lower than that of the first layer and coated on the first layer, said second layer partly entering into the pores to firmly bond to the first layer through the pores.

17.(amended) An antireflection film as claimed in claim 16, wherein [the] an amount of said metallic oxide particles contained in said first layer [having high index of refraction] is not smaller than 70wt. %.

21.(amended) An antireflection film as claimed in claim [20] 16, wherein [the] an amount of said material [penetrated] entering into said first layer [having high index of refraction] is not smaller than 10 vol. %.

22.(twice amended) An antireflection film as claimed in claim 16, wherein [a part of said antireflection film is produced as follows:] said second layer is formed of a liquid material to be hardened such that after a porous precursory layer [of] for forming said first layer [having high index of refraction] is formed, the liquid material to make the second layer [having low index of refraction] is coated on said precursory layer [and] so that a part of said liquid material to make the second layer [having low index of refraction penetrates] enters into pores of said precursory layer, and then said liquid material is hardened.

23.(amended) An antireflection film as claimed in claim 22, wherein said precursory layer becomes a porous layer including air after [the] a solvent of the precursory layer is dried or crosslinked.

25.(twice amended) An antireflection film as claimed in claim 22, wherein [the] an index of refraction of said precursory layer for forming the first layer is not greater than 1.64 and the index of refraction of said first layer [having high index of refraction] is not smaller than 1.64.

26.(twice amended) An antireflection film as claimed in claim 16, wherein the index of refraction of the second layer [having low index of refraction] is in a range from 1.45 to 1.51.

27.(twice amended) An antireflection film as claimed in claim 16, wherein said <u>second</u> layer [having low index of refraction] includes [minute] particles which [have excellent] <u>provide</u> marring resistance and [low] <u>lower</u> coefficients of friction.

28.(amended) An antireflection film as claimed in claim 27, wherein said [minute] particles <u>in the second layer</u> [having excellent marring resistance and low coefficient of friction] are composed of silica or fluorocarbon polymers.

forth for 30 times. In Table 1, an open circle means that there was no scratch and a cross means that there were many scratches.

[0033] Chemical resistance was measured as follows: gauze soaked with 3% NaOH solution was put on a sample for a certain time (30 minutes) and then the gauze was removed. After being wiped, the sample was examined by the visual observation. In table 1, an open circle means that the color of reflected light from the sample did not change and a cross means that the color of reflected light from the sample changed.

9 Examples 2 through 5 [~~An~~ a hard coating layer is an electrically conductive layer.]

[0034] Antireflection films of Examples 2 through 5 were produced in the same manner as Example 1 except that indices of refraction of layers were set as shown in Table 1 by adjusting the compositions of the layers. The values of minimum reflectance of antireflection films are shown in Table 1.

Example 6 [A layer having high index of refraction is an electrically conductive layer.]

[0035] A coating film of acrylic resin for the hard coating layer 3 was formed on a polyester film with the thickness of 100μm by the wet coating method described above and was dried. Further, by the same method, a coating film for the layer 2 having high index of refraction was formed on the layer 3 and dried, and a coating film for the surface layer 1 was formed on the layer 2 and dried.

[0036] Then, these coating films were cured by the irradiation of ultraviolet rays. The obtained antireflection film comprised the hard coating layer 3 with the thickness of 5μm, the layer 2 having high index of refraction with the thickness of 86nm and the surface layer 1 with the thickness of 95nm. Compositions of layers 1 through 3 were as follows:

Composition of the hard coating layer 3

Multifunctional acrylic resin	70 parts by weight
Silica	30 parts by weight

Composition of the layer 2 having high index of refraction

Multifunctional acrylic resin	15 parts by weight
ITO (average particle size: 10nm)	85 parts by weight

Composition of the surface layer 1

Multifunctional acrylic resin	70 parts by weight
Silica	30 parts by weight

[0037] The minimum reflectance of the antireflection film was 1.5% and pencil hardness (JIS K5400) of the surface (the surface layer 1) was 2H.

[0038] In Example 6, the layer 2 having high index of refraction included electrically conductive minute particles. The surface resistance of the hard coating layer 3 was $5.0 \times 10^9 \Omega/\square$ and the index of refraction of that was 1.50. The indices of refraction of the layer 2 having high index of refraction and the surface layer 1 were 1.65 and 1.50, respectively.

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17 Examples 7 and 8 [An layer having high index of refraction is an electrically conductive layer.]

[0039] Antireflection films of Examples 7 and 8 were produced in the same manner as Example 3 except that the indices of refraction of layers were set as shown in Table 1 by adjusting the compositions of the layers. The values of minimum reflectance of antireflection films are shown in Table 1.

Comparative Examples 1 and 2 [A layer having high index of refraction is an electrically conductive layer.]

[0040] Comparative Example 1 was produced in the same manner as Example 6